

## **Klaus S. Lackner**

Biographical Sketch

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Klaus S. Lackner joined the faculty of Columbia University in 2001, where he is now the Ewing-Worzel Professor of Geophysics in the Department of Earth and Environmental Engineering. He received his Ph.D. in 1978 in theoretical physics from the University of Heidelberg, Germany. He held postdoctoral positions at the California Institute of Technology and the Stanford Linear Accelerator Center before joining Los Alamos National Laboratory in 1983. He has been a scientist in the Theoretical Division for much of that time, but also has been part of the Laboratory's upper management. He held several positions among them Acting Associate Laboratory Director for Strategic and Supporting Research, which represents roughly a third of Los Alamos National Laboratory.

Klaus Lackner's scientific career started in the phenomenology of weakly interacting particles. Later searching for quarks, he and George Zweig developed the chemistry of atoms with fractional nuclear charge. He is still participating in matter searches for particles with a non-integer charge in an experiment conducted at Stanford by Martin Perl and his group. After joining Los Alamos National Laboratory, Klaus Lackner became involved in hydrodynamic work and fusion related research. In recent years, he has published on the behavior of high explosives, novel approaches to inertial confinement fusion, and numerical algorithms. His interest in self-replicating machine systems has been recognized by Discover Magazine as one of seven ideas that could change the world. Presently he is developing innovative approaches to energy issues of the future. He has been instrumental in forming ZECA, the Zero Emission Coal Alliance, which is an industry-led effort to develop coal power with zero emissions to the atmosphere. His recent work is on environmentally acceptable technologies for the use of fossil fuels.